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ZOOGOER

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Friends of the National Zoo

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Front Cover

A decade ago, golden lion tamarins were nearly extinct. This year, Brazil's tiny population of wild tamarins will increase about 10 percent when 15 zoo-born golden lion tamarins are released into the wild (page 4). Photo by Michael L. Smith.

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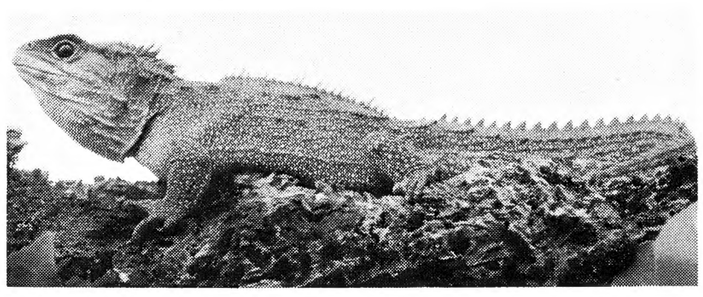

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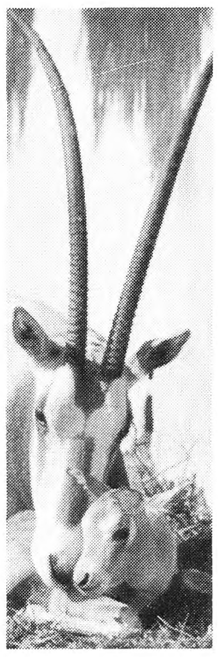

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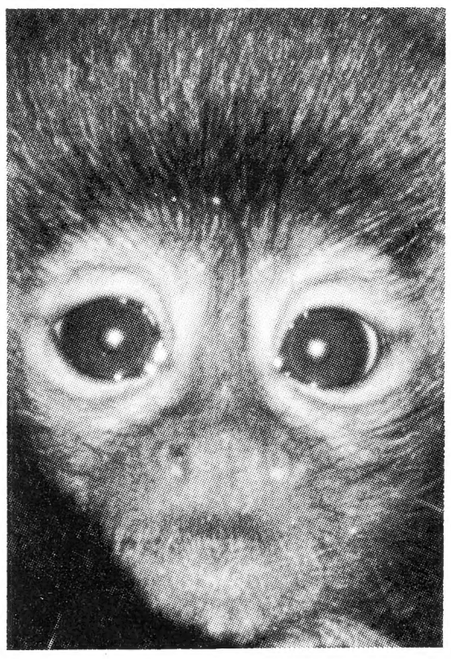

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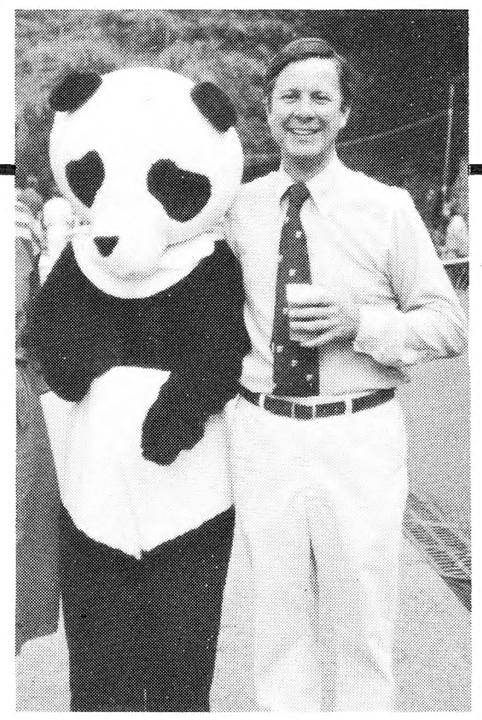


It's Official . . . June Is Zoo and Aquarium Month

Dear Fonz Member,

When the President of the United States proclaimed June as Zoo and Aquarium Month in 1982, he officially recognized the increasingly important role that zoos and aquariums are playing as centers of wildlife conservation.

The Presidential Proclamation states: "Many of our zoos and aquariums have pioneered in efforts to conserve the thousands of species they house. They have also collaborated with institutions around the globe to preserve wildlife and to develop more sophisticated techniques for exhibiting animals in a natural setting."

Zoo and Aquarium Month salutes these institutions for providing an ark in the global flood of human civilization. Zoos have already saved from extinction such species as the bison, whooping crane, Arabian oryx, Hawaiian goose and Pere David deer. Some animals, like the National Zoo's Atlas lions, Mongolian wild horses, European bison and Pere David deer, only survive in protected preserves.

The Presidential Proclamation also recognizes the educational value of these institutions: "Zoos and aquariums play a major role in the cultural life of our nation, providing a wholesome recreational and educational environment for more than 125 million visitors and a living classroom for some 20 million school children each year."

During Zoo and Aquarium Month, for example, more visitors will come to the National Zoo than go to all the game parks of East Africa in a year! FONZ and the Zoo will be celebrating the month with a variety of special events for you (pages 22-23). The crucial conservation role that the National Zoo carries out with your support is highlighted in this issue's reports on returning golden lion tamarins to the wild (page 4), protecting the Guam rail (page 14), the dedicated contributions of FONZ volunteers (page 19), and on a miracle—the birth of a rare and beautiful antelope (page 9).

Thanks to you, FONZ continues to carry out Noah's work.

Sincerely,

Sabin Robbins

Sabin Robbins
Executive Director

Golden Lion Tamarins: A Report from the Field

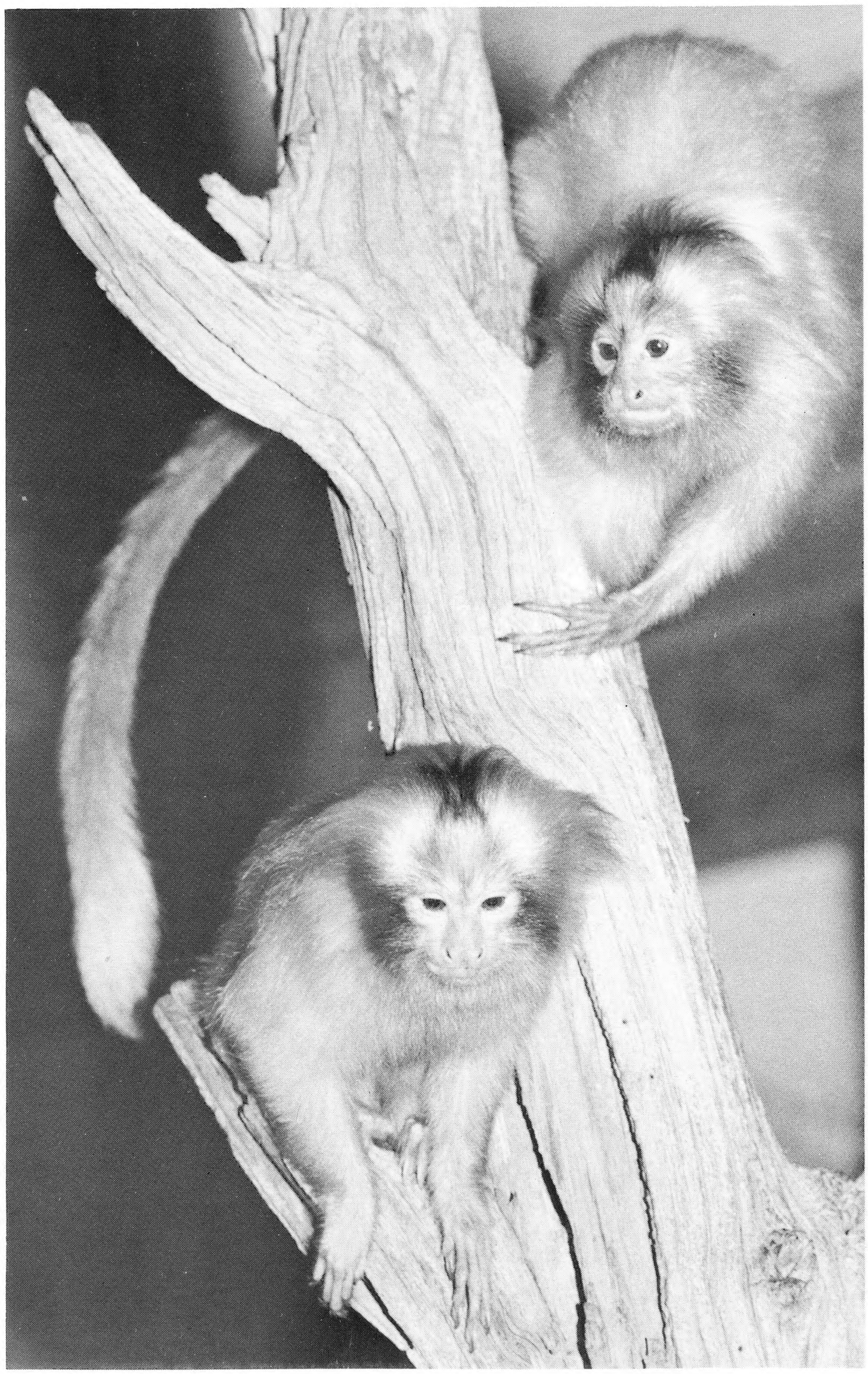
Lou Ann Dietz

Fifteen zoo-born golden lion tamarins returned to their native Brazil last November as part of a major conservation effort to replenish the dwindling wild population of this highly endangered species.

Coordinated by Dr. Devra Kleiman, the National Zoo's Acting Assistant Director for Animal Programs, the Golden Lion Tamarin Conservation Project culminates a decade-long cooperative captive breeding program for the species.

Golden lion tamarins were nearly extinct in 1973, but captive propagation has now produced enough animals to attempt this remarkable reintroduction program. National Zoo Primate Curator Dr. Ben Beck plans to release nine of the captive tamarins into the wild in June 1984. Brazilian field operations began May 1983 preparing for the release. Lou Ann Dietz, coordinator of the project's education program, sent the following report from the Poco das Antas Federal Biological Reserve, where she, field research director Dr. Jim Dietz and the project's field team have spent the past year:

As with any field project, our progress has been the result of much sweat (we've had temperatures in the hundreds for the last three months), a few tears, some blood (the mosquitoes are ferocious!), a lot of patience and a



Jessie Cohen, NZP Graphics and Exhibits

Most of the golden lion tamarins to be released into the wild came from the National Zoo, where captive breeding has been highly successful.

huge amount of determination.

We were prepared for the problems—the trains that pass through the center of the Reserve several times a day, the dam that will soon flood a small part of the Reserve and the large areas that were deforested before the Reserve was established. But we weren't prepared for the excitement of actually seeing tamarins in the wild.

The first time, as Jim Dietz and I were walking along the Reserve road, we heard rustling in some small trees about 50 feet away. Moving through the dense foliage were two spots of reddish fur. My first impression was of their color, fire-like with reflected sunlight, much darker than any golden lion tamarins we have seen in zoos. The local name for these colorful creatures is *saui vermelho,* which means "tiny red monkey."

Even now, after watching the tamarins every day, Jim is still impressed by their agility and quickness. He is fascinated by their adroit locomotion, so different from the memorized patterns of movement of the captive tamarins. Hearing their high-pitched birdlike calls coming from the forest gives us all a feeling of excitement and anticipation.

Jim and his assistants are working intensively with five groups of wild golden lion tamarins, trying to discover what the requirements are for survival of the species in the wild. Radio transmitter collars on one to three adults in each family group allow the field research team to locate them daily.

Their activity patterns are similar to those of captive tamarins. Holes in trees seem to be the most common sites for dens, but they may also use shrubs. One tamarin took refuge in an armadillo burrow in the ground!

These tamarins don't seem to move about in treetops as much as they do in shrubs. The vegetation at that level forms a barrier of leaves, vines and spiny plants that is impenetrable by avian predators from above and mammalian predators from below. Our biologists also find this vegetation difficult to enter. We slowly trudge through spines and swamps while the tamarins practically fly through the shrubs above.

Jim estimates that approximately 45 individual wild golden lion tamarins live completely within the 12,400-acre Reserve. As many as 80 more live there part time. A few lion tamarins live in forests around the Reserve, but these areas are disappearing quickly.

Last December, we learned that an area adjoining the Reserve was going to be deforested and drained for cattle pasture. We knew the area sheltered a family of golden lion tamarins. Jim already had a

Jessie Cohen, NZP Graphics and Exhibits

On the first leg of their journey to their native Brazilian forestland, 15 zoo-born golden lion tamarins left the National Zoo last November. Kleiman (left) accompanied them on the trip and Beck (far right) trained them to survive in the wild.

radio collar on one of the adults.

We weren't able to stop the cutting, but we did convince the owner to wait a few weeks while we tried to trap the tamarins. Besides saving the animals, Jim wanted to develop techniques for moving wild tamarins from one area to another.

A few days before Christmas, we caught the mother and the four juveniles of that group. We cut down the den tree the family had been using and moved it, with the mother and juveniles inside, to the Reserve.

We finally caught the father a few weeks later and transferred him to the new area, hoping he would reunite with the mother and young. Unfortunately, he left shortly after for an area about three kilometers away, where he is now living. Breaking up the family group for as short a time as one month was apparently detrimental to social organization.

The candidates for reintroduction into the Reserve (most are National Zoo-born) arrived at the Rio de Janeiro airport last November, accompanied by Dr. Devra Kleiman. All arrived in fine form after their 24-hour trip from Washington, D.C. They were met at the airport by a barrage of Brazilian photographers and reporters. The tamarins (and Dr. Kleiman) took it all in stride, as if appearing on national television were a daily occurrence.

The tamarins had a month at the Primate Center in Rio, to adjust to the climate and food here, before National Zoo Primate Curator Dr. Ben Beck began teaching them to survive on their own in the land of their ancestors.

The captive monkeys have progressed well and have had no problems with the heat. Thanks to the tropical Brazilian sun, they have become darker in color. They have learned to eat new fruits and insects and to look for their food in new places, such as inside logs or hanging from branches. The older adults have been reluctant to try anything new, but the juveniles learned quickly and then taught their elders.

Some deaths were expected: One adult male died during the second month in Brazil, as did the father of the major family group more recently. But in March, twins were born to the large family group and are surviving well.

The older adults have been reluctant to try anything new, but the juveniles learned quickly and then taught their elders.

Since arriving at the Reserve, we have put together a very special team of dedicated Brazilians who, besides helping to make this project work, are receiving unique experience that will let them expand conservation in Brazil. We have also built a simple but comfortable permanent structure in the Reserve to use as field headquarters and to attract other Brazilian scientists to do field research in the future. (A major obstacle to conservation work in Brazil is the shortage of trained biologists willing to do field research.) During our first months in Brazil, we raced to construct the building before the spring rains began in September. All of us spent 14-hour days laying bricks, mixing cement, white-washing, installing plumbing, repairing the road, etc. A successful field biologist must know more than just biology!

The reforestation effort to improve the Reserve's carrying capacity for golden lion tamarins is also progressing. Workers have planted seedlings of native species in some areas and spread lime to correct soil acidity.

In spite of our intensive efforts, the future of the golden lion tamarin in the wild is still doubtful without the active support of the local people. The principal threat to tamarins and other animals here is the destruction of their habitat. The three municipalities surrounding the Reserve are the target for our education program. The lowland forest is being cut and drained for pasture and commercial firewood at a rate greater than that for any other area in the state of Rio de Janeiro.

We have given presentations to local school classes and other community groups and made personal visits to the owners of land bordering the Reserve.

Real progress does not happen quickly in this kind of work, but we are already getting some results. Two owners of illegal captive golden lion tamarins have brought their animals to the Reserve. Tamarin posters are beginning to pop up in the strangest places. Many people have volunteered to help. And instead of calling us *os Americanos,* people are beginning to call us *o pessoal do mico-leao*—the lion tamarin people! □

Several tamarins lived in an area outside the Reserve (below) that was later cut and burned (below right). Above: an adult lion tamarin in the wild; right: a young lion tamarin in the Zoo's Handrearing Facility.

Jessie Cohen, NZP Graphics and Exhibits

Dietz

Conservation Strategies

Dr. Devra Kleiman

There is no single strategy for long-term conservation of endangered animals. Each program must be based on problems unique to the species. Reintroducing captive-born animals back into the wild is only appropriate where the wild population is near extinction, a protected natural area is available and the captive population is secure enough to permit the loss of numerous individuals.

Because these conditions exist for the golden lion tamarin, the National Zoo's rehabilitation and reintroduction program for this species is a unique example of how zoos can prevent the loss of species.

Rehabilitation and reintroduction are two of many conservation strategies. Rehabilitation or retraining and acclimatization is a necessary part of reintroduction when the animals have little or no experience living in the wild. Rehabilitation is especially difficult in species whose survival depends on highly evolved and complex behaviors that must be learned during a prolonged period of juvenile development.

Rehabilitation programs for whooping cranes, Peregrine falcons, orangutans and golden lion tamarins are complicated and costly because they involve training long-lived and in some cases extremely intelligent animals to copy feeding, hunting, migrating, mating and nesting patterns unique to their species.

For example, well over a decade of research and several million dollars went into captive breeding and reintroduction of Peregrine falcons to the Eastern United States, where they had been wiped out. Hundreds of young Peregrines have been hatched in captivity and many have been released; yet there is such concentration on individuals that each bird has a name and media coverage.

Similarly, to rehabilitate and release orangutans in Sumatra and Borneo, biologists work with some animals for years before release—even though they were originally wild-born. The animals being released have been confiscated from illegal owners, who captured most of them as infants. The long development time for a young orangutan means that rehabilitation is time-consuming and labor-intensive for these highly intelligent and long-lived animals.

We have focused the same kind of concentration on the first group of golden lion tamarins to return to Brazil. We know their family backgrounds, pedigrees and personal characteristics. Each tamarin is as familiar to us as some of our closest friends and relatives.

Sometimes captive-born animals can be released without such intensive retraining and rehabilitation. European bison (wisent) and more recently Arabian oryx were bred in captivity and returned to areas where they had been exterminated. While it is still too early to determine the success of the Arabian oryx program in Jordan and Israel, the wisent have done very well in European reserves. These programs required less effort at rehabilitation because the wisent and Arabian oryx do not have to learn special foraging skills and do not need complex shelters.

Two other conservation strategies are translocation or the transfer of wild-born animals from one area of their range to another, and introduction or transferring a species into a new area. Translocation requires relatively little time and money because rehabilitation is not necessary: The animals are already survivors. Introduction is appropriate when the species' original habitat has been totally destroyed or when the species cannot survive within its natural range. But many early introduction efforts did not involve a conservation program and caused unexpected problems. European rabbits, for example, have been considered a plague ever since they were introduced into Australia.

But these introductions are a far cry from a conservation-oriented program involving planned introduction or reintroduction. Lou Ann Dietz' "Letter from the Field" is a reminder that real conservation is not just releasing animals into the wild and forgetting them. It involves local education, working closely with local students and colleagues, improving the habitat and rehabilitating the animals—a most complicated effort. □

Birth of a Scimitar-Horned Oryx

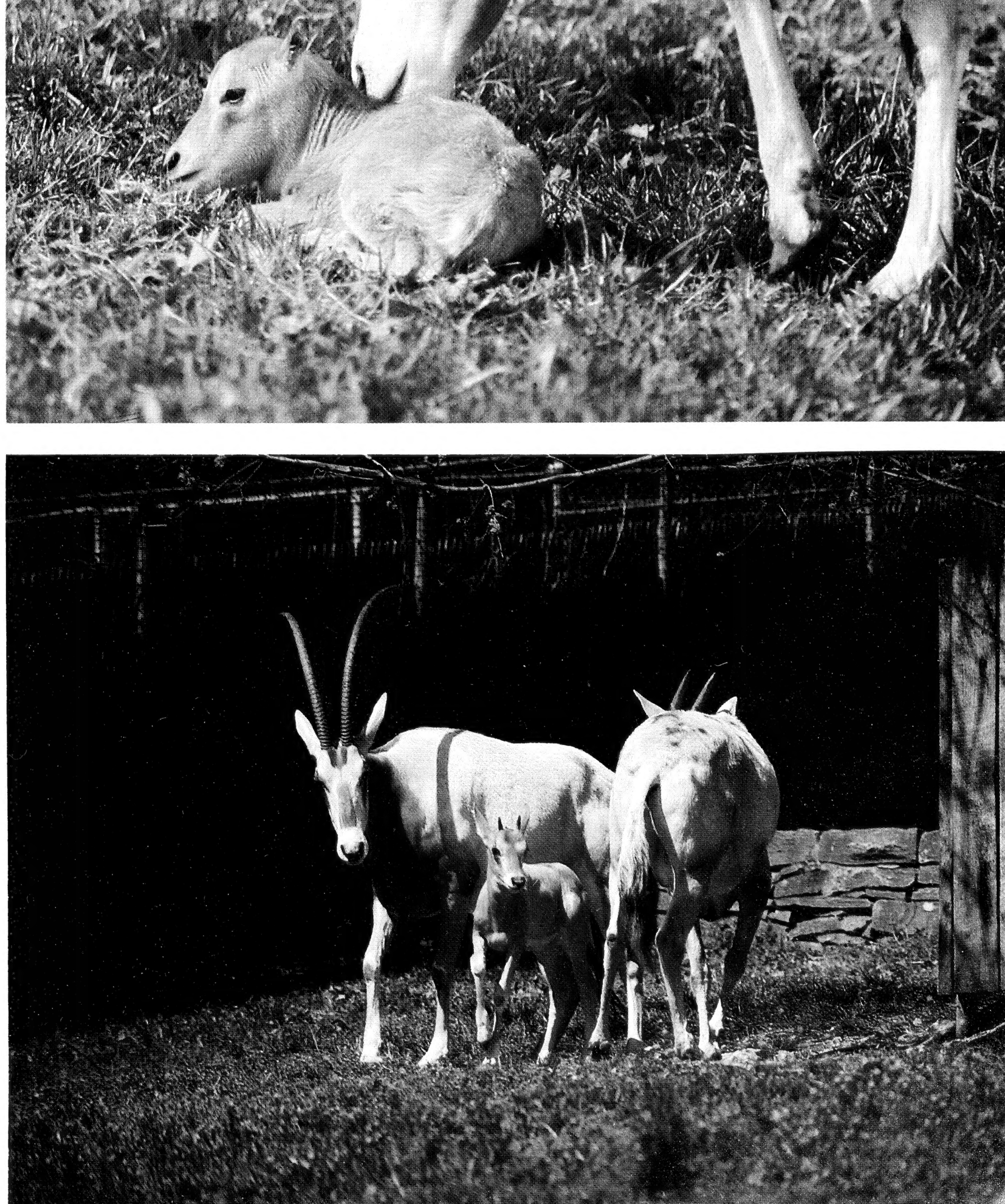
photographs by Jessie Cohen, NZP Graphics and Exhibits

At the Zoo, March came in like a 17-pound baby scimitar-horned oryx! A handful of spectators braved the cold to watch the birth on March 7, 1984.

"The day after she was born, there was a heavy blizzard," said Hoofed Stock Collection Manager Elizabeth Frank, "so we had to bring her inside."

Several other offspring have also been sired by Leo, the Zoo's original male scimitar-horned oryx, who came from the wild in 1967. But this newborn is the first to stay here. The others joined the thriving herd of about two dozen oryx at the Zoo's Conservation and Research Center in Front Royal, Va.

Native to semi-desert areas from Morocco and Senegal to Egypt and the Sudan, the oryx has disappeared from much of its former



Shortly after giving birth, the mother oryx urged her newborn to stand for the first time (above). One month later, the youngster was romping friskily with her parents (right).

Jessie Cohen, NZP Graphics and Exhibits

range because of hunting and competition with domestic livestock for scarce desert grasses and shrubs.

The most gregarious of the three oryx species, the scimitar-horned oryx is generally found in herds of 20 to 40 individuals. Alert, wary and keen sighted, they defend themselves with their sharp horns. They are named for their gracefully arched horns, which resemble the curved saber or scimitar of the Middle East. □

To stimulate nursing, the mother nuzzles the baby and licks its mouth.

The Mystery of Regeneration

Lori Starrs

On a flat rock in southern Mexico, a basilisk lizard basks in the sun. In a split-second swoop of talons and feathers, a hawk dives from the sky, seizes the lizard by the tail and starts to carry it off.

As the basilisk struggles in the hawk's grasp, its tail suddenly breaks off. The basilisk falls to the ground and scurries under a rock. The hawk flies off, the thin tail its only prize.

In about 10 weeks, because of the lizard's capacity to regrow its tail, this drama may be repeated.

Regeneration is the ability of living organisms to replace parts of their bodies. In its most basic form, it is the process of replacing old tissue with new, just as a cut or scrape heals. This type of regeneration is called physiological regeneration. All animals do it.

The lizard's ability to regenerate a tail, however, is not physiological regeneration. It benefits instead from reparative regeneration—the ability to regrow an entire part of the body. The amount of time required for regeneration in the lizard varies greatly. Warm temperature speeds the process; cool weather slows it.

In the lizard's case, cells grow at the break point. These cells can form any kind of tissue needed to grow back the lost part.

Animals with less complex structures, like worms and hydra, can regenerate an entire new body from only a part of their body tissue because missing parts are replaced by tissue similar to what is left; new cells don't have to differentiate into specialized tissue such as bone, skin or muscle.

Inexperienced fishermen who try to rid themselves of starfish preying on shellfish will find, to their dismay, that a starfish cut in half and thrown back into the water will become two separate, complete starfish!

There are still unexplained aspects of regeneration. Mammals can't regenerate arms or legs but buck deer annually regrow huge antlers shed the fall before. Also, how can a flatworm cut in half know to regenerate a head at one end, a tail at the other? Why can a lizard lose and regrow a tail but not a leg? What is the relationship between simple repair and the regeneration of a working appendage? And finally, is it possible that we could apply our knowledge of animal regeneration to humans? □

A new tail tip has begun to grow on this leopard gecko. Almost all lizard species are capable of regrowing a lost tail.

Overleaf: a green-crested basilisk. Photo by Jessie Cohen, NZP Graphics and Exhibits.

Narrow Escape

Kimberley Young

Since the 1960s, six species of birds on the small island of Guam have become extinct, including the Marianas mallard, nightingale reed warbler and white-browed rail. Nine other species are in eminent danger of extinction, and vast areas of the island's forest are nearly devoid of bird life.

Until recently, no one knew why. Pesticides, habitat loss and introduced diseases were examined and rejected as possible causes.

It now appears that introduced predators have posed the most serious threat to Guam's native birds. During the past 50 years, three species of rats, feral cats, dogs, pigs and a monitor lizard have been introduced to Guam. But the most destructive has apparently been the Philippine tree snake.

Brought in around 1947 to prey on the island's rats, the Philippine tree snake has expanded its range and gradually eradicated Guam's birds.

These poisonous snakes prey on eggs, young and adult birds. Since the snakes are arboreal, all birds are threatened. One of the most seriously endangered birds is the Guam rail (*Ballus owstoni*). Until the 1970s, its population was estimated at 80,000. The birds were so common that they could be readily seen along roadsides and were even hunted as a game species until 1976. Today fewer than 50 birds survive.

A monogamous, flightless bird, the Guam rail is one of 17 bird species unique to the island. It inhabits shrubby forests and savannas—typical habitat of tropical forest rails, but very different from that of North American marsh rails. It is now the only surviving rail of Micronesia.

Last April, the Guam rail was placed on the Endangered Species list on an emergency basis until final ruling and normal Endangered Species Act procedures can be completed. Also in April, the National Zoo's Curator of Ornithology, Dr. Eugene Morton, went to Guam and returned with four of the birds—one pair and two adults.

Morton delivered the rails to the Zoo's Conservation and Research Center in Front Royal, Va., for captive breeding. The four adults have acclimated well and additional birds will soon be sent from Guam, where another captive breeding program is underway.

Understanding the decline of birds of Guam may help avert similar declines on other Pacific islands. In the meantime, since rails breed well in captivity and steps are being taken to control the Philippine tree snake, it is hoped that the Guam rail has had a very narrow escape from extinction. □

Eugene Morton

Tino Aguan's tame Guam rail "Koko" has helped gain publicity on Guam for the plight of his species.

Primate Signs

Rob Shumaker

People have long wondered what makes them different from the rest of the animal kingdom. Some scientists say language is *Homo sapiens'* greatest distinction. However, that claim was challenged when several chimpanzees learned American Sign Language (ASL), the gestural language of the deaf. Whether the chimps are actually using language or are simply being trained to imitate is debated among scientists and linguists.

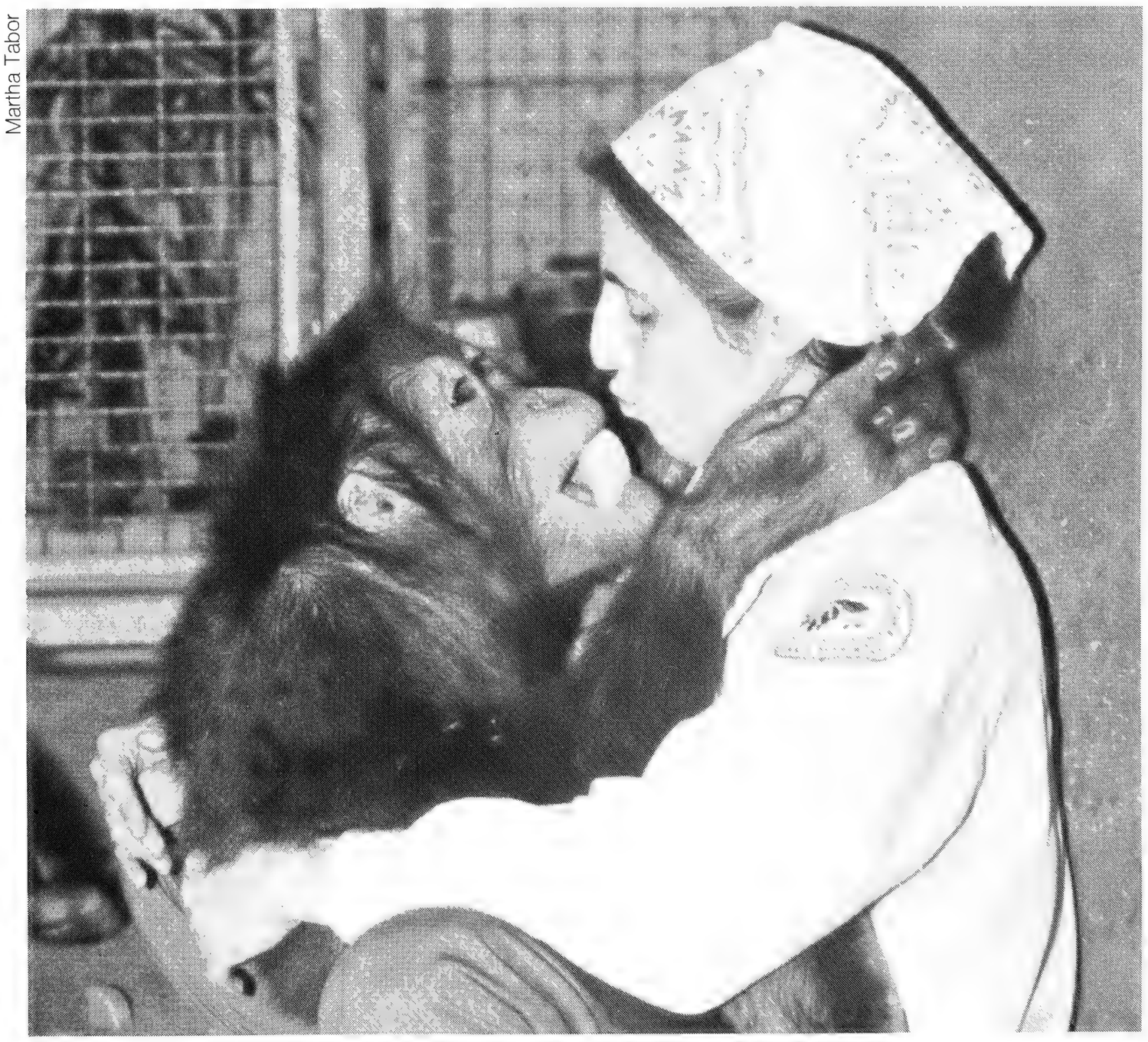
The first non-human primate to learn ASL was Washoe, a chimp with a vocabulary of over 240 signs. Seventeen-year-old Washoe lives in Washington State with four other chimps, including her adopted son Loulis, who has learned over 45 signs from Washoe.

Washoe's instructor Dr. Roger Fouts explains that one purpose of project Washoe is to increase understanding of how language is learned and to "apply our findings . . . to the treatment of non-communicating children." The project's other major concern is chimpanzee welfare. Over the years, Washoe has stimulated much public interest in and concern for her species.

Similar projects have begun since project Washoe. Duane Rumbaugh, Associate Director and Chief of Behavior at the Yerkes Regional Primate Research Center in Georgia, was intrigued by Washoe and wanted to explore computer communication with great apes. Begun in 1972, Rumbaugh's project was dubbed LANA, from "language analog." Lana also became the name of the first chimp to communicate through computer symbols. Lana learned to request almost anything she wanted—food, drink, music, movies—by using a 100-key computer terminal.

In California, Dr. Francine Patterson of the Gorilla Foundation communicates through ASL with Koko, a female gorilla who has a vocabulary of over 600 signs. Koko shares her trailer with Michael, also a lowland gorilla, who has an expanding vocabulary.

The latest ASL primate project began in 1978 at the University of Tennessee with Chantek, then a baby orangutan who is three days younger than the National Zoo's male orang Azy. Chantek has learned about 100 signs, reports project director Dr. Lyn Miles. Like



Martha Tabor

Bond maintains close physical contact with the Zoo's orangs to build trust and security.

Rob Shumaker is an intern and volunteer keeper in the National Zoo's Great Ape House.

Jessie Cohen, NZP Graphics and Exhibits

the other projects, the goal is helping children with language disabilities, said Miles, "as well as learning more about the orangutan, earth's rarest and most endangered ape."

Although not at the same level of intensity as Washoe, Koko and Chantek, the orangs at the National Zoo are also learning ASL. The project began in 1978 when ape keeper Melanie Bond began teaching signs to Atjeh, then a 13-year-old who showed a fondness for playing with fingers. Bond felt ASL could become an excellent management tool and a source of recreation for Atjeh.

She was right. Her idea has developed into a program that involves not only Atjeh, who now

Seven-year-old Bonnie signs "apple" with Rob Shumaker (left). At five years old (above), Bonnie had already learned to ask for certain favorite treats.

weighs well over 300 pounds, but also his mate Pensi, their six-year-old son Azy, three-year-old daughter Indah, and seven-year-old Bonnie, an unrelated female who may become Azy's mate. The newest addition to the group is Tucker, Pensi and Atjeh's latest offspring, born February 23, 1983.

Bond's goal is not to study language acquisition, but "to develop a really close relationship with the animals I care for," she said. "I want to communicate with them in as many different ways as I can. If I can't get my point across one way, I have other options."

The Zoo's orangs understand what is signed to them and draw on vocabularies of four to five signs to ask for favorite treats like raisins, bananas, apples or to be tickled. They are eager to learn and enjoy working with their teachers.

Their vocabulary is small; they are not drilled with long lessons. "We're learning for learning's sake and for fun," Bond said.

It is extremely important that these highly intelligent animals have such mental stimulation. The project also helps keepers care for the orangs' physical well-being. Questions like, "What are you eating?" or "Where's your hurt?" usually elicit a quick response. Harmful objects the animals may find in their yard can be visually identified by a keeper when a mouth is opened in response to a sign. Cuts and scratches can be seen and treated much more easily when the orangs show where they are.

"There's no question in my mind that they understand what I'm asking," Bond said. Although the Zoo uses no sophisticated tests to prove Bond's statement, those who have worked with the orangs agree with her. Some of them remember incidents like the day when Atjeh signed "sweet" five times to get an M&M candy with each sign. Then Atjeh began signing "banana." Since "sweet" was a new word for him, his teacher molded his hands back to the "sweet" sign; but Atjeh continued to sign "banana." When he was offered an M&M, he pushed it away and again signed "banana." Finally, his teacher noticed a food bucket on the floor with a banana on top. Atjeh happily accepted his well deserved banana and walked away.

An added benefit of the program has been the positive response from zoogoers. Deaf children are especially attracted when they see the orangs signing with keepers. According to Brenda Schroeder, a teacher of the deaf in Maryland, her students "really feel important" when they can understand what's going on in a world where they sometimes feel isolated.

Deaf children frequently wonder if the orangs are also deaf and if they can sign with them. The orangs seem only to respond to people they know, but they are interested in signing from the public. Bonnie has learned to respond when she is asked to "make a funny face," and it will be interesting to see if in the future she responds to signing from the

Jessie Cohen, NZP Graphics and Exhibits

The Zoo's youngest orang Tucker sleeps on Pensi's shoulder.

Jessie Cohen, NZP Graphics and Exhibits

public as well.

At six and seven years old and weighing nearly 100 pounds each, Azy and Bonnie are quite strong and rambunctious. If they become too rough with a keeper during lessons, the keeper leaves their enclosure. If they try to prevent their teacher from leaving, the keeper must physically reprimand them—as do orang parents, though the parents are much more forceful than the keepers.

"Keepers can't endure the blows that Azy and Bonnie are used to exchanging during play between themselves and with Atjeh and Pensi," said keeper Doug Donald. "If we are to continue going in with Azy and Bonnie as they get larger and older, it is important now that they be taught acceptable play behavior with their more frail human compatriots."

The orangs and their keepers rely on close physical contact for trust and security. This is especially important in continuing a one-to-one relationship with Bonnie, so that keepers will be able to work closely with her throughout future pregnancies, births and infant care. Orangutans are highly endangered and every birth is invaluable.

The Zoo's orang signing project has become a source of recreation, an excellent management tool and has provided much needed mental stimulation for all of the orangs involved. So while scientists debate primate intelligence and while hypotheses about primate language acquisition are questioned, Atjeh can quietly let us know that, given the choice between bananas and anything else . . . he likes bananas! □

By the time Atjeh was 15 years old (above), he frequently signed for his favorite treat—bananas. Today, his six-year-old son Azy (left) is also learning to sign.

Labors of Love

Sally Tongren

"At the National Zoo, volunteer activities have multiplied like rabbits since the founding of FONZ," says Philip Kopper in the 1983 Smithsonian booklet *Volunteer! Oh, Volunteer!*

Multiplied they certainly have. The 1983 roster of 536 volunteers is a far cry from the handful of enthusiasts who sat up nights with Mohini, the white tigress, as she awaited her first cub in 1964, and from the 17 who launched the FONZ school tours from the back of a station wagon in 1968.

However, unlike rabbits, these volunteers are planned offspring, appearing in response to requests from the Zoo for assistance. While FONZ recruits, trains and schedules volunteers, most of them work within National Zoo programs.

What do FONZ volunteers do for over 45,000 hours a year? To find out, just walk through the Zoo.

Early on a weekday morning, you would find a number of guides waiting at the Education Building for school children to arrive. Originally, these tours followed a single basic format; but today there is great diversity. Some guides work with children under eight years old, whose short legs soon grow weary on a full tour. These youngsters start out in a classroom where, with skins and feathers, guides introduce a few simple concepts—for instance, that animals are not all alike but can be divided into groups according to their coverings. Armed with the notion that there are mammals, reptiles and birds in the world, the children then have a short walk in the Zoo.

Students from third grade through high school are presented with more advanced concepts. For example, the tour highlighting "Vanishing Animals" tells of the plight of the world's wildlife and the place of the Zoo in conservation. "The World of Animals" points out that while all living things must face the same problems in order to survive, different creatures solve these problems in different ways. High school students focus on primates, using the combined resources of the Museum of Natural History and the Zoo.

Other guides await the arrival of the FONZ Zoo bus that brings fourth graders from one of the 16 D.C. schools participating in a six-visit program. The program combines classroom work with Zoo experience to give a comprehensive overview of the animal kingdom.

Throughout the school year, rain or sleet, snow or shine, FONZ Park Guides turn up for their tours. Although there are good tours and bad ones, nice kids and bratty ones, the fact that a substantial number of guides have been at it for better than 10 years speaks to their essential satisfaction.

Even on weekends, you will find guides in the Gnu Room, the volunteers' lounge. These are the Roving Guides who work weekends year round as well as some week days in the summer. Roving Guides conduct scheduled tours, but you will more often see them about the Park, ready to help visitors.

If you spot a Roving Guide, stop and chat. They can tell you all kinds of interesting things about the animals as well as about current happenings of special interest. They can answer your questions or help you find your way. And they would love to do so.

Before you leave the Education Building, you might look into the computer room and find another volunteer feeding data from the last panda watch into the computer. This is a volunteer from the Potpourri Program, a place for those with a myriad of talents that they are willing to offer to fill the Zoo's diversity of needs, from typing to gardening.

Out in the Zoo by the Panda Yard, you may see a solitary figure leaning on the rail, balancing a clipboard and stopwatch. This is a volunteer from the Behavior Watch Program, the modern descendant of the early Preg Watches.

Pandas take a lot of watching; changes in behavior are often the best—or only—sign that Ling-Ling is nearing estrus, the precious two or three days a year when mating

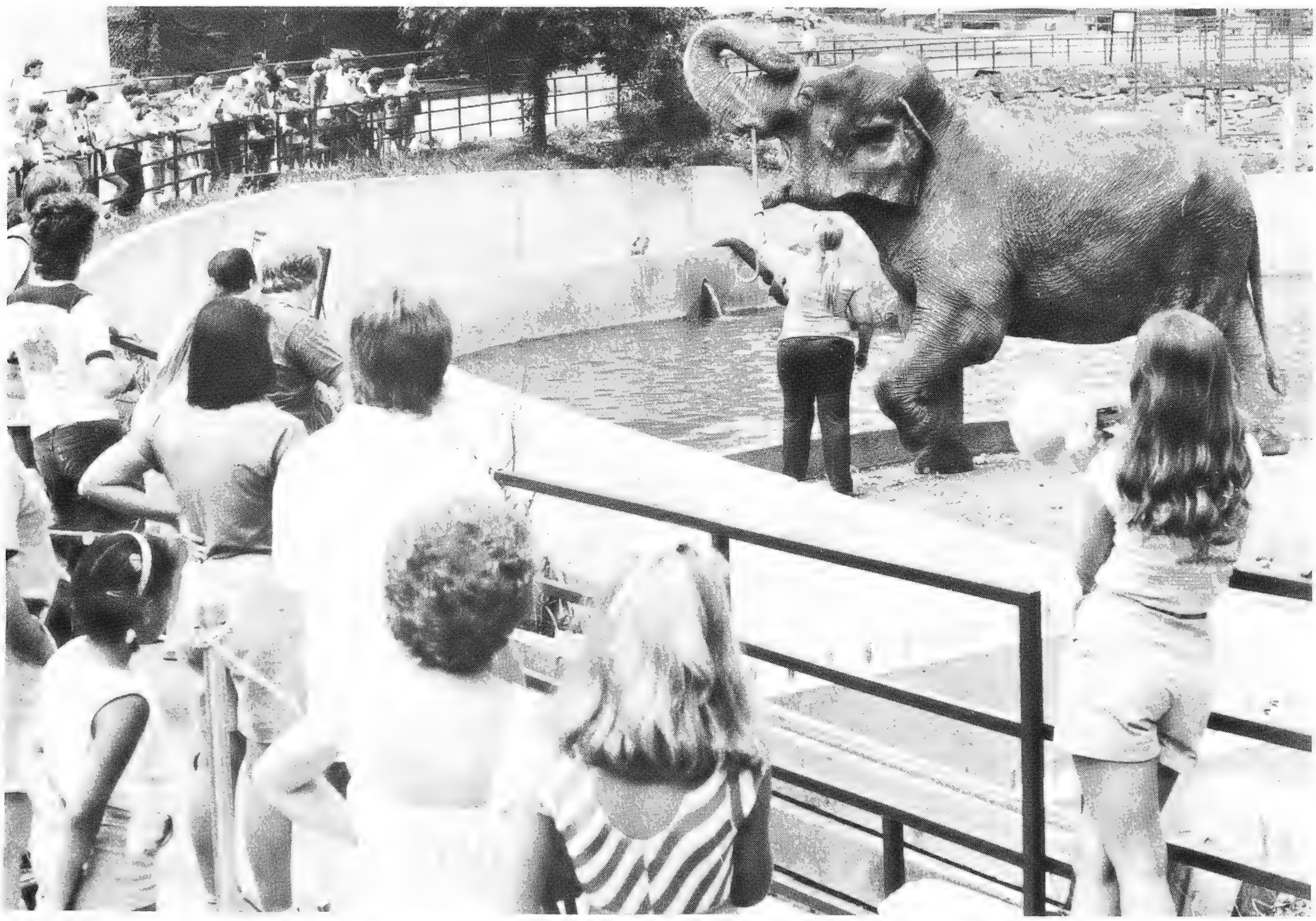
is possible. In the spring, observers watch Ling closely, noting precisely when and how she scent marks, her vocalizations, her signs of restlessness—all of which may signal the onset of estrus.

In the summer, if there has been a spring mating, a 24-hour watch begins. Observers sit in the Panda House kitchen and, over closed-circuit TV, watch Ling sleep peacefully or munch bamboo. Panda watches may be dull at times, but there is always the chance that some lucky volunteer will be there for the great event! Last year, FONZ volunteer Roberta Baskin was present on a scheduled Preg Watch when the first panda birth in the U.S. occurred.

Pandas are not the only animals observed. Behavior Watch volunteers also gather information about apes, cats, seals and other Zoo species. Animal behavior research is based on hours of detailed, standardized observations. Zoo researchers engaged in behavior studies can turn to FONZ for trained volunteers who fill in check sheets minute-by-minute. The interactions of a baby bear with its mother or the actions of a gorilla with stereotyped behavior, methodically noted and quantified, add to the sum of zoological knowledge or help answer questions about animal management.

At the Rock Creek end of the Zoo is the Handrearing Facility, which is closed to the public. Here, at mid-morning, volunteers are well into an 11-hour shift that started at 7 a.m. Handrearing people work the longest shifts and have probably the most demanding and responsible job of any of the volunteers. They care for those Zoo babies that must be raised by humans because the mother has no milk, or rejects the baby, or because the baby is sickly. Many of these infants are weak when they arrive and need the best and tenderest of care, 24 hours a day, if they are to survive. Since the fewer people that handle these babies the better, shifts are long and volunteers work three shifts a week for two weeks, followed by two weeks off, year round. Handrearing accounted for 6,693 volunteer hours in 1983.

Almost any species may appear at Handrearing. A baby tiger was everyone's darling three years ago; last year it was a little red panda. Golden lion tamarins, bandicoots, tree shrews, maned wolves and



A FONZ volunteer (right) explains how keepers train the Zoo's elephants.

"You know," the youngster remarked, "this tour really was worth a quarter!"

many antelope have been bottlefed with carefully selected formulas. The babies are allowed to play, but never to become pets, for when they are weaned they must return to their relatives.

If we return to the Education Building around noon, we may meet the ZooLab, HerpLab and BirdLab volunteers on their way to open the labs. These people maintain order and hand out discovery boxes, answer questions and direct visitors to interesting activities in these popular facilities. They receive the same training as Roving Guides and may rotate within that program. In fact, many volunteers do double duty. It is not unusual for a Park or Roving Guide to be a Behavior Watcher, a Handrearer or both.

After lunch, we might attend an elephant training demonstration. The keepers hold daily training sessions with all the elephants, making it possible for them to manage and care for these largest of land mammals, and also stimulating the elephants' active minds. FONZ volunteers serve as Elephant Training Interpreters, bridging the gap between busy keepers and a curious public, explaining just what is going on, why an elephant must lie down on command, why it must go where it is told to go.

If your visit were in the summer, you could stop at the Puppet Show presented by the Junior Zoo Aides, the youngest FONZ volunteers. Originally designed as an activity that would enable Juniors to present the Zoo's message of "Don't feed/tease the animals," this program is now growing toward a more substantive one that will challenge older youngsters. It will surely produce a crop of dedicated conservationists, and—who knows?—perhaps future zoologists.

This brief tour may have given you a notion of the regular volunteer programs, but don't forget the special events! Where would ZooNight be without volunteers to introduce a tortoise or hand-screen T-shirts? Who plants ground cover around the Elephant House and builds the panda furniture? FONZ volunteers help staff Sunday Afternoons at the Zoo, assist with Summerfest and work on a wide variety of special programs.

What makes these dedicated people run? Probably there are as many reasons as there are individuals—the enjoyment of doing something different and fun, the pleasure of associating with congenial and like-minded friends, the satisfaction in the gratitude of children at the end of a tour. Tour guide Cecil McLelland says one of her favorite "thank-yous" came from a boy who had to pay his own bus fare to the Zoo. "You know," the youngster remarked, "this tour really was worth a quarter!"

For many there is the stimulation of learning. National Zoo staff members are generous with volunteers, accepting them at their levels of competence, explaining what is taking place and sharing information. For some there is satisfaction in taking part in work that, had their lives followed different paths, would have attracted them as a career. And for all there is the knowledge that their work contributes to the welfare of the Zoo's animals and programs and to the pleasure of its visitors. □

J. Mulvaney

Tour Guides vary their programs according to students' ages.

FONZ News

WILDLIFE SAFARIS

Amazon Jungle
July 14-21 and December 8-17

Join this exciting safari through the lush rainforest of the Amazon and see the most prolific, diverse array of flora and fauna in the world. The Amazon wilderness teems with over 25,000 species of exotic plants, almost half the world's 8,600 species of birds, more butterflies than anywhere else on earth, over 2,000 species of fish and a wide variety of amphibians and reptiles.

Baja Cruise
February 2-13, 1985

This 11-day cruise-adventure takes you from the rugged cactus-dominated desert of Baja, Cal., to the tropical jungles of western Mexico. Baja's remote islands and waters support an incredible variety of marine and bird life, including gray whales who give birth in Baja's shallow lagoons. Chances are excellent that you can touch—even kiss—one of the friendly whales!

Wildlife of Nepal
February 22-March 16, 1985

This exciting tour takes you from the field research site of the Smithsonian Nepal Tiger Ecology Project to an evening engagement with a member of Nepal's royal family . . . from the scenic Prince Charles Trek through the foothills of the Himalyas to a thrilling raft trip into the lowland jungles of the Terai . . . from an elephant-back safari to a reception with the Ambassador of the United States. You can even enjoy an optional sidetrip to Delhi!

New Guinea Adventure
March 27-April 10, 1985

A naturalist's paradise, New Guinea has exotic fauna and flora found nowhere else in the world. You'll travel by boat to dense rainforest rich in wildlife and visit remote villages where you'll join a "sing-sing" barbecue with tribespeople and witness a traditional skin-cutting ceremony.

For all Safari details and itineraries, call FONZ at 673-4960.

SUMMER CAMP

At the FONZ Summer Day Camp, 4-5 year olds will enjoy "Close Encounters . . . of the Animal Kind" and 6-9 year olds will explore animals and nature in exciting programs that combine learning and fun.

For each age group, the Camp offers courses designed to stimulate children's interest in the natural world through hands-on classroom activities and mini-field trips around the Zoo.

Cost of each four-day section (for 4-5 year olds) is $45 to FONZ members and $52 to non-members. Each eight-day section (for 6-9 year olds) is $80 to FONZ members and $92 to non-members.

FONZ will provide campers with a midmorning snack and a special FONZ button to identify camp participants.

Space is limited, so please register early. Call FONZ at 673-4960 for an application.

Discount Admission at the Capital Children's Museum

For a limited time only the Capital Children's Museum is offering FONZ members a 25% discount on museum admission. By showing a valid FONZ membership card or the coupon on this page, FONZ members will be given a special admission of $1.50 per person (regularly $2 per person). This offer is valid June 1 through December 31, 1984 only, for up to six people per visit.

Capital Children's Museum

Present this coupon or a valid FONZ membership card to receive a $.50 per person discount on museum admission.

Offer valid 6/1/84-12/31/84

Friends of the National Zoo

What's New at the Zoo?

Panda Furniture

During four busy days in May, hundreds of people volunteered to build the Zoo's new exercise furniture in the giant pandas' yard. Ling-Ling and Hsing-Hsing can be seen enjoying their new "playgrounds" every morning, before the temperature reaches 75°F. (Look for the full story of this biggest-ever FONZ volunteer project in the next issue of *ZooGoer.*)

Summer Classes

Seven exciting classes are offered for all ages this summer at the Zoo:

Zoo Giants teaches 4-5 year olds about hippos, elephants, giraffes and other large Zoo animals through hands-on materials, visits to the animals, play-acting and art projects.

The Predators of Beaver Valley, a course for 6-8 year olds and their parents, looks at life styles and survival adaptations of bears, wolves, bush dogs, otters, seals and sea lions.

The Forgotten Animals, for 9-11 year olds, looks at the most diverse group in the animal kingdom, small mammals—their habitats, lifestyles and special adaptations which help them survive.

Zoo Sampler takes 12-16 years olds through a variety of Zoo activities, from what it's like to work behind the lines in an animal exhibit to how the Zoo prepares the animals' food.

Wildlife Illustrations gives adults step-by-step instructions in drawing and painting animals, by the National Zoo's official artist Warren Cutler.

Animal Behavior, a six-session course for adults, satisfies the requirement of a core course in animal behavior in the Wildlife Studies Certificate Program. Participants will be instructed in data gathering methods that can be used in the zoo setting.

Taxonomy: Class Acts, a four-session course for adults, qualifies as an elective in the Wildlife Certificate Series. Students will learn how taxonomists reconstruct evolutionary patterns, determine animal distributions and define species.

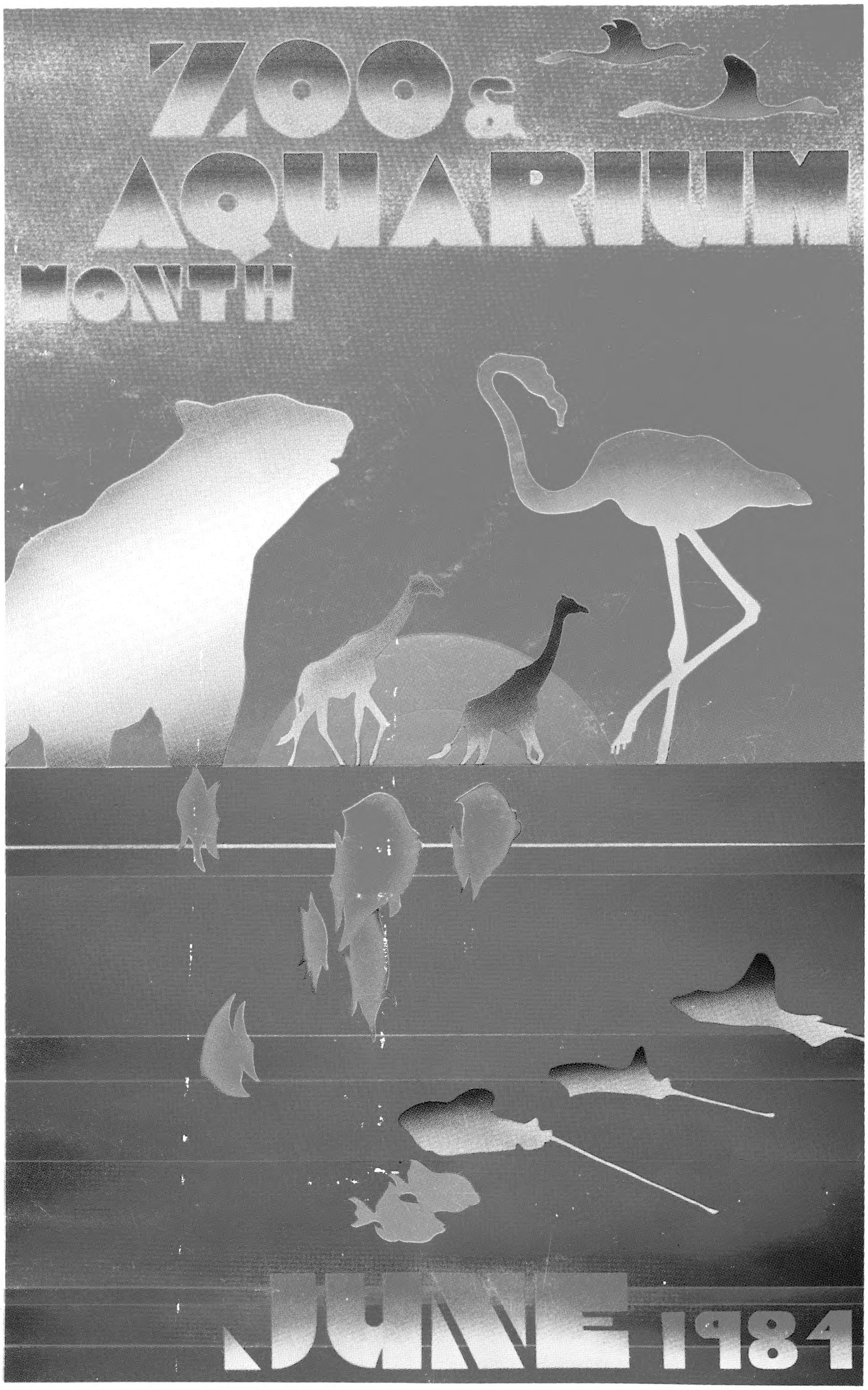
For dates, times and costs of all classes, call FONZ at 673-4960.

Animal Update

- A new Austral-Asian exhibit in the Small Mammal House features tree shrews, Prevast's squirrels, plantain squirrels, potoroos, tree kangaroos and an echidna.
- Two newborns are on exhibit in the Hoofed Stock area—a dorcas gazelle born March 31 and a scimitar-horned oryx born March 7 (see page 9).
- In the Small Mammal House, three newborns are on exhibit: a Titi monkey born February 5, a Goeldi's monkey born March 7 and a red bellied tamarin born April 1.

Jessie Cohen, NZP Graphics and Exhibits

Newborn Titi monkey and mother.



In June America honors the valuable conservation and education role of its zoos and aquariums (p. 2). Our Zoo shops offer this colorful Zoo and Aquarium Month postcard for 25¢ and a limited-edition 14"x20" poster version for $1.95.

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